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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,883	11/28/2006	Patrick Rondier	1200.748	6149

7590
Longacre & White
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Bethesda, MD 20817

08/08/2007

EXAMINER

HOFFBERG, ROBERT JOSEPH

ART UNIT	PAPER NUMBER
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2835

MAIL DATE	DELIVERY MODE
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08/08/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/576,883	Applicant(s) RONDIER ET AL.	
	Examiner Robert J. Hoffberg	Art Unit 2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4/21/06 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>11/28/06</u> . | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Specification

1. The disclosure is objected to because of the following informalities: page 6, line 14, change "buss" to "bus". Appropriate correction is required.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: #97 (Fig. 1). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 8 is objected to because of the following informalities: "(21)" should be "(23)". Appropriate correction is required.

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4. Claim 14 is objected to because of the following informalities: "the preceding claim" should be "claim 13" and "aluminium" should be "aluminum". Appropriate correction is required.

5. Claim 15 is objected to because of the following informalities: "the manifolds" lack antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7. Claims 1-8, 10-18 and 20-21 are rejected under 35 U.S.C. 102(a) as being anticipated by Brost (US 6,745,823).

With respect to Claim 1, Brost teaches a device for cooling power electronics (36,38), comprising a support plate (26) on which the power electronics are mounted, characterised in that it comprises a circuit (48,62,64,70) for cooling by circulation of a liquid (Col. 2, line 20), mounted under (see Fig. 1) the support plate.

With respect to Claims 2-3, Brost further teaches the cooling circuit comprises a liquid inlet channel (48,70 near 62), a liquid outlet channel (48,70 near 64) and channels (48,70) for the circulation of the liquid between the inlet channel and the outlet channel (claim 2), in that the cooling circuit comprises deflectors (94) situated in the liquid circulation channels (claim 3), the cooling circuit comprises turbulators (90,92) distributed in the liquid circulation channels (claims 4 and 20), the channels of the

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cooling circuit are produced in a first metal plate (56) (the pressing method of forming the device is not germane to the issue of patentability of the device itself and therefore, this limitation has not been given patentable weight) (claim 5), the cooling circuit is fixed under (see Figs. 1 and 15) the support plate by brazing (Col. 5, lines 19 and 30) (claim 6), the cooling circuit comprises at least one second intermediate metal (Col. 4, line 65) plate (42) fixed between the support plate and the first pressed metal plate (56) (claim 7), that the second metal plate is flat (see Fig. 15), brazed to (Col. 5, line 30) the first pressed metal plate (claim 8), the metal is aluminum (Col. 5, line 28) (claim 10), at least one plate (42) comprising a plating (Col. 4, line 65, clad) by co-lamination (claims 11 and 21), the pressed plate is fixed directly by brazing (Col. 5, line 30) under (see Fig. 1) the support plate (claim 12), the pressed plate is a plate (56) comprising plating by co-lamination (Col. 5, line 31, clad) (claim 13), the plates are made from aluminum (Col. 4, line 65 and col. 5, line 28) (claim 14), the support plate (21) carries the manifolds (claim 15).

With respect to Claim 16, Brost teaches a method of manufacturing a power electronics cooling device, characterised in that it comprises the following operations: producing a cooling circuit (48,62,64,70) by pressing a first metal plate (56), brazing the cooling circuit on a support plate (26) for the power electronics (36,38), brazing (Col. 5, line 65), on the cooling circuit, an inlet (62) and outlet (64) manifold for a cooling liquid (Col. 2, line 20).

With respect to claims 17-18, Brost further teaches the production of the cooling circuit comprises an operation of brazing (Col. 5, line 30) the first plate under a second

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intermediate metal (42) and brazing (Col. 5, lines 19-20) the second plate under the support plate (claim 17) and the pressing of the first metal plate comprises the pressing of circulation channels (70) (the pressing method of forming the device is not germane to the issue of patentability of the device itself and therefore, this limitation has not been given patentable weight) (claim 18).

8. Claims 1-3, 5 and 9 are rejected under 35 U.S.C. 102(a) as being anticipated by Tsuchiya et al. (US 6,961,244).

Tsuchiya et al. teach a device for cooling power electronics (16,20), comprising a support plate (12) on which the power electronics are mounted, characterised in that it comprises a circuit (38,38a,38b) for cooling by circulation of a liquid (Col. 5, line 11), mounted under the support plate (claim 1), the cooling circuit comprises a liquid inlet channel (38a), a liquid outlet channel (38b) and channels (38) for the circulation of the liquid between the inlet channel and the outlet channel (claim 2), the cooling circuit comprises deflectors (34) situated in the liquid circulation channels (claim 3), the channels of the cooling circuit are produced in (see Fig. 3) a first metal plate (the pressing method of forming the device is not germane to the issue of patentability of the device itself and therefore, this limitation has not been given patentable weight) (claim 5), a metal (Col. 6, line 5) manifold (40) connected to the cooling circuit (claim 9).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brost (US 6,745,823).

With respect to Claim 9, Brost discloses the claimed invention including a manifold (62) connected to the cooling circuit. Brost fails to disclose a metal manifold. It would have been obvious to one having ordinary skill in the art at the time the invention was made to manufacture the manifold from metal which is a good thermal conductive material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

With respect to Claim 19, Brost discloses the claimed invention except for an alternator or alternator/starter for a motor vehicle. It would have been an obvious matter of design choice to use the claimed invention for cooling power electronics in any application including as an alternator or alternator/starter for a motor vehicle, since applicant has not disclosed that solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with cooling any power electronics device in any application.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fukazu et al. (US 6,648,062), Capriz et al. (US 6,661,658), Cosley et al. (US 6,679,315), Pfahul et al. (US 6,717,115) disclose a circuit for cooling including channels for cooling having deflectors and manifolds. Sträet et al. (US

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6,662,859) disclose a support plate having manifolds. Lestang (IE 55621) is a English version of applicant furnished EP 124428 A1.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert J. Hoffberg whose telephone number is (571) 272-2761. The examiner can normally be reached on 8:30 AM - 4:30 PM Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jayprakash Gandhi can be reached on (571) 272-3740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RJH 8/1/07 *RJH*

JN Gandhi
8/6/07

JAYPRAKASH GANDHI
SUPERVISORY PATENT EXAMINER